

# Nation Celebrates As Carpenter Gets Fast Tour, Hero's Welcome

Astronaut M. Scott Carpenter, following his return from Grand Turk Island has had a whirlwind tour which has included almost countless honors, including meeting three presidents.

He was greeted by an estimated 500 cheering spectators at Patrick Air Force Base on his arrival from Grand Turk in addition to his wife and family, his mother, NASA Administrator James E. Webb and Colorado Senators and Congressmen.

A few minutes later a motorcade started to Cape Canaveral and thousands of people lined both sides of the highway to cheer Carpenter as the motorcade moved slowly toward its destination.

The party went directly to

Hangar S at the Cape and in a brief ceremony there Administrator Webb presented the Distinguished Service Medal of the National Aeronautics and Space Administration to Carpenter and Associate Director Walter C. Williams.

In accepting the award, Carpenter said, in part, "I accept this humbly on behalf of all the many people on whom these flights depend and without whom they would not be possible . . ."

Williams said, "This is really a team effort, and this award is shared by at least 20,000 people. It is a tremendous experience to work with people like these."

Following the presentation the party went to the Cape press site where a press conference was held.

On May 28 Carpenter and his family were flown to Denver, Colo., along with other dignitaries. A large crowd gathered at Denver's Stapleton Field to get a peek at Colorado's most famous son including Gov. and Mrs. Steve McNichols and Denver Mayor R. Y. Batterton who presented Carpenter with a "Denver Dollar" in a plastic case with the following inscription

beneath it: "Lieutenant Commander Malcolm Scott Carpenter. Presented in appreciation of your visit to Denver and with warmest personal regards. R. Y. Batterton, Mayor."

Following the short ceremony at the airport the group travelled to Boulder in a motorcade, and registered at the Harvest House Hotel. Later the Carpenters visited the home of Colorado University President Quigg Newton and following a buffet dinner it was reported that Carpenter took over the entertainment by sitting on the living room floor and playing "Yellow Bird" on the guitar while the guests all sang it with him.

The following morning the party was driven to nearby Folsom Stadium on the CU campus where an estimated 17,000 had gathered to honor Carpenter. Governor McNichols, after being introduced by Boulder Mayor John Holloway, read the Scott Carpenter Week proclamation after extending "a warm and cordial welcome" to Carpenter and his family. He said "every man, woman and child in Colorado and the nation is bursting with pride as a result

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CANDANCE NOXON CARPENTER (Candy), 5, takes a look at the spacecraft in which her daddy (right) orbited the earth. The scene took place in front of Hangar S at Cape Canaveral, Fla. after Carpenter's return from Grand Turk Island.



The Hazards of Inner Space—Denver Post



RETURN OF A HERO. Astronaut M. Scott Carpenter pauses on the Balcony of the Harvest House in Boulder, his home town. In the background the Colorado mountains he climbed as a boy, and part of Folsom Stadium.



HER FLYING DAYS ENDED, "Aurora 7" floats quietly on the Atlantic, supported by a special flotation collar, hours after her three orbits about the earth.



OUT OF THE DRINK and safely aboard the carrier Intrepid, Pilot M. Scott Carpenter gets an assist from Lt. Col. E. W. Schear of Wright-Patterson Field, Dayton, Ohio in removing his pressure suit.



"MY APOLOGIES for not having aimed a little bit better on re-entry," Carpenter tells President John F. Kennedy, talking to the Chief Executive by radio-phone from the Intrepid. "Oh, fine and good," replied Kennedy. "We want to congratulate you."



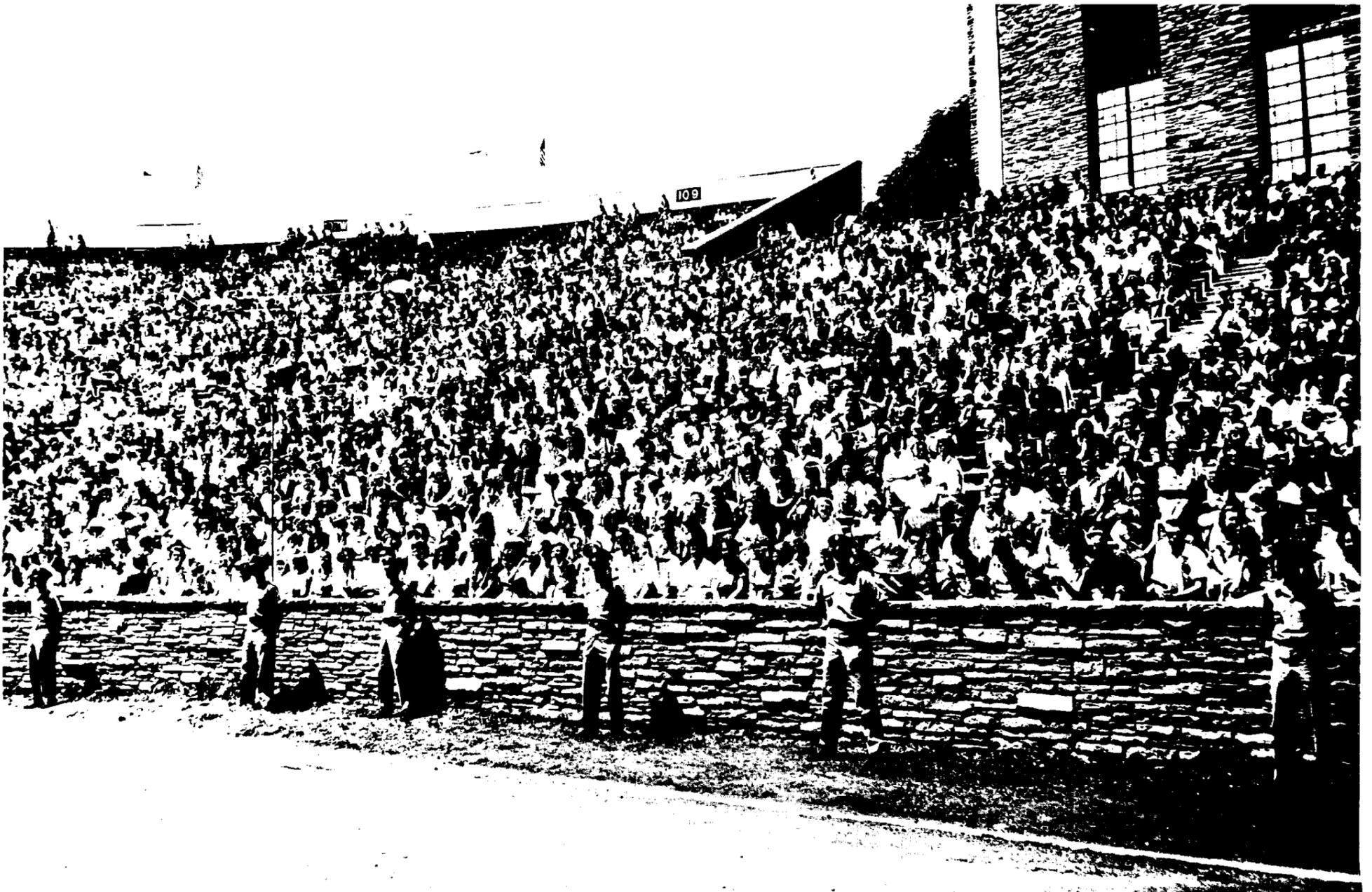
"AT THIS ANGLE—" Carpenter uses his hands to describe phases of the MA-7 mission in crew quarters at Grand Turk Auxiliary. Grand Turk Island, where he was taken for debriefing.



RELAXING AT GRAND TURK, Carpenter discusses the mission with fellow astronaut and backup pilot Wally Schirra.



MEANWHILE THE SPACECRAFT starts the long trip back to Cape Canaveral aboard the destroyer Pierce, which picked it up several hours after Carpenter was returned to the Intrepid.



A PART OF MORE THAN 17,000 persons that crowded into Folsom Stadium at the University of Colorado on Scott Carpenter Day, May 29, in Boulder. The crowd included many a personal friend of the Carpenters.

## Carpenter Gets Fast Tour, Hero's Welcome

(Continued from Page 1)

of your great achievement." The governor also presented Carpenter with a large silver tray which was engraved "To Lieutenant Commander Malcolm Scott Carpenter, USN, with the profound appreciation of the people of Colorado. Steve McNichols, Governor. Orbital Flight - Mercury Aurora 7, May 24, 1962.

President Newton then presented Carpenter with the University Recognition Medal and a bachelor of science degree in aeronautical engineering which he had failed to win in 1949. Newton said "in the opinion of the Department of Aeronautical Engineering his subsequent training as an astronaut has more than made up for the deficiency in the subject of heat transfer."—this was the subject which had kept Carpenter from previously winning his degree.

In accepting the degree Carpenter said "this is my most prized honor . . . this degree still doesn't mean that I am more able to pass heat transfer."

Speaking of his three-orbit flight later, and particularly the reentry phase, he said "I hope my unique recent experience in heat transfer justifies a waiver in this degree."

Mayor Halowell then pre-

sented Carpenter a tea and coffee service on behalf of the citizens of Boulder.

Carpenter, before speaking to the crowd briefly, introduced the members of his family with a particular work for each. In introducing Candance, 5, he said, "She has the sweetest disposition I have ever known."

Speaking of Kristen, 6, Carpenter said, "She is the prettiest little girl I have ever seen."

Introducing Jay, 10, he said, "His name is Robert Jay Carpenter and I ask you to remember that name. I think he is going to be an Olympic diver some day!"

On calling Scott, 12, forward, he said, "This is my number one boy. His younger brother will have to do a lot of diving to keep him out of the Olympics."

After lauding the care he received from his mother, Mrs. Florence Carpenter of Boulder, he introduced his wife, Rene, another Boulder resident, to whom he was married while both were attending the University.

"Everything that I am now I owe to the lady who picked up after I left my mother—my beloved lovely wife, Rene."

Speaking to the crowd he said he accepted all of the honors bestowed upon him in

behalf of the many thousands of persons who made possible his Aurora 7 flight. He added that the flight was significant in many ways and that he felt the most important Project Mercury effort is to prove man's capability in space.

Carpenter said he regretted that his children would never learn to love Boulder and Colorado as he had. He said, "Colorado is my heritage."

He closed by saying that it had been his honor and pleasure to have contributed his small part to the exploration of space, and "I will bask no longer in the glory of this moment. There are capsules to be checked and men waiting to fly them."

Immediately following the ceremonies in Folsom Stadium, there was a motorcade through downtown Boulder and an estimated crowd of 75,000 jammed both sides of the streets throughout the route to cheer Carpenter and wave signs created especially for the occasion. One sign proclaimed "5-4-3-2 YOU'RE THE 1!"

Carpenter's last public appearance of the day was at a press conference held immediately following the motorcade's return to the Harvest House. He told the media representatives, "I am my greatest critic, and it was im-

patience which caused the mistakes I made during the flight.

"There were so many beautiful sights that I could not wait to get my capsule pointed in the right direction to see them." Asked when he wanted to fly again he said, "ASAP—as soon as possible."

When asked if he would like his sons to be astronauts, he answered, "I would like my sons to do what they want to do."

He emphasized that information collected by the astronauts in the Mercury program was made available to all mankind. "We all stand to gain more from space exploration—and mark my words, trips to the moon and other planets—than from any other exploratory step man has ever undertaken."

The Carpenter party and other dignitaries present for the activities were later guests of the Boulder Chamber of Commerce at a luncheon.

Colorado temporarily said goodbye to Carpenter the following day in a giant Memorial Day parade in Denver. The largest crowd ever to witness a parade in the state was on hand to get a look at Carpenter and an estimated 250,000-300,000 jammed the 24-block parade route.

On June 5, Carpenter and his family travelled to Washington and New York to receive additional honors. They were accompanied by MSC's Associate Director Walter C. Williams and his family.

He received personal congratulations from President Kennedy who said, "I cannot imagine better representatives of what we like to think our country stands for than the . . . men who have taken part in these flights."

Although his schedule precluded a tickertape parade in New York, he got tickertape and confetti anyway as thousands watched his motorcade proceed into Manhattan and to the Waldorf where he was the guest of honor at a civic luncheon. A crowd of 1,500 at the luncheon gave Carpenter a standing three-minute ovation.

Present at this luncheon were former President Herbert Hoover and Harry Truman. Mr. Truman said, "He has done something I wouldn't do, even if he promised to give me the moon if he could." Mr. Hoover said all Americans are grateful for Carpenter's feat which "gave us a lift and raised the prestige of the United States . . ."

On departure, Carpenter was given New York's gold Medal of Honor.



**TWO HAPPY CARPENTERS** relax during a quick trip from Patrick AFB to Denver's Stapleton Field.



**CARPENTER HOLDS ALOFT** the 'Denver Dollar' presented to him by Denver Mayor R. Y. Batterton upon arrival in Denver.



**RENE AND SCOTT** smile happily as the motorcade approaches Boulder, despite the sudden change in temperature between Cocoa Beach, Fla. and the Colorado city.



**THE CARPENTERS VISITED** the home of Colorado University President Quigg Newton later that evening. They are shown here being welcomed by Newton and his wife.



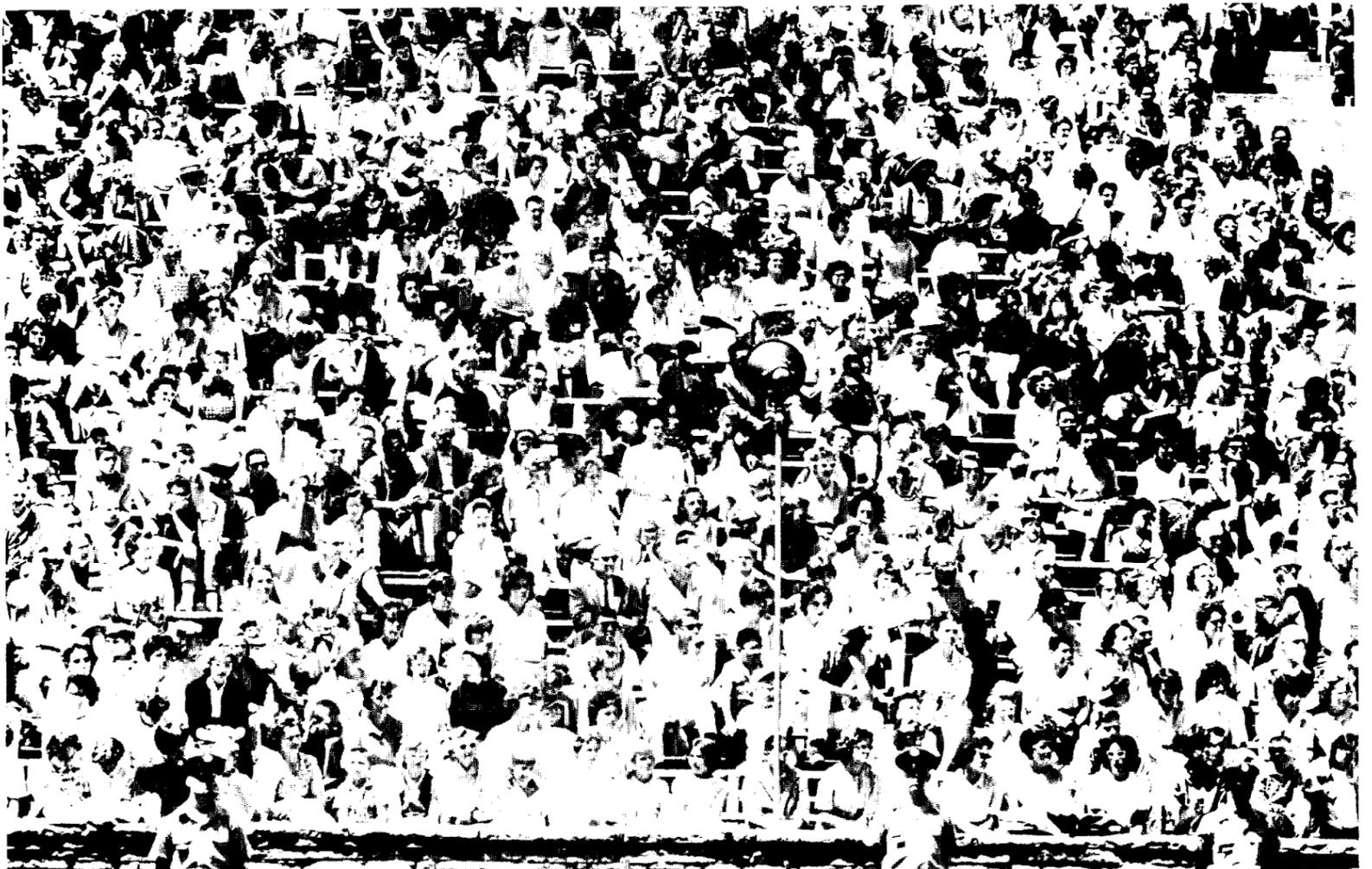
**CARPENTER WAVES TO** well-wishers as the motorcade leaves the Harvest House for ceremonies at Folsom Stadium.



**A COFFEE AND TEA** service from the citizens of Boulder were presented to Carpenter by Mayor John Holloway during the activities at the stadium.



A HOMETOWN HERO expresses his gratitude to the people of Boulder and Colorado and proclaims his love for the state.



ANOTHER PARTIAL VIEW of the crowd which gathered in the stadium to greet Colorado's greatest living hero.



"THIS IS MY MOST TREASURED HONOR" said Carpenter, after being awarded a bachelor of science degree in aeronautical engineering by CU President Quigg Newton.



A CHEERING CROWD of an estimated 75,000 persons acclaimed Carpenter as the motorcade moved through downtown Boulder following the stadium activities.



ANOTHER VIEW OF the Boulder crowd as the motorcade moved downtown. Carpenter's beloved Rocky Mountains are shown in the background.



THE PHOTOGRAPHERS HAD a field day during the press conference at the Harvest House with Rene and Scott as principals and Powers as moderator.



"I'M M. S. CARPENTER of the Palmer Lake News. I have a question for my son," said a distinguished looking gentleman during the press conference.



THE COLORADO PRESS Photographers Association had still another gift and an honorary membership for one who qualified by taking pictures in space.



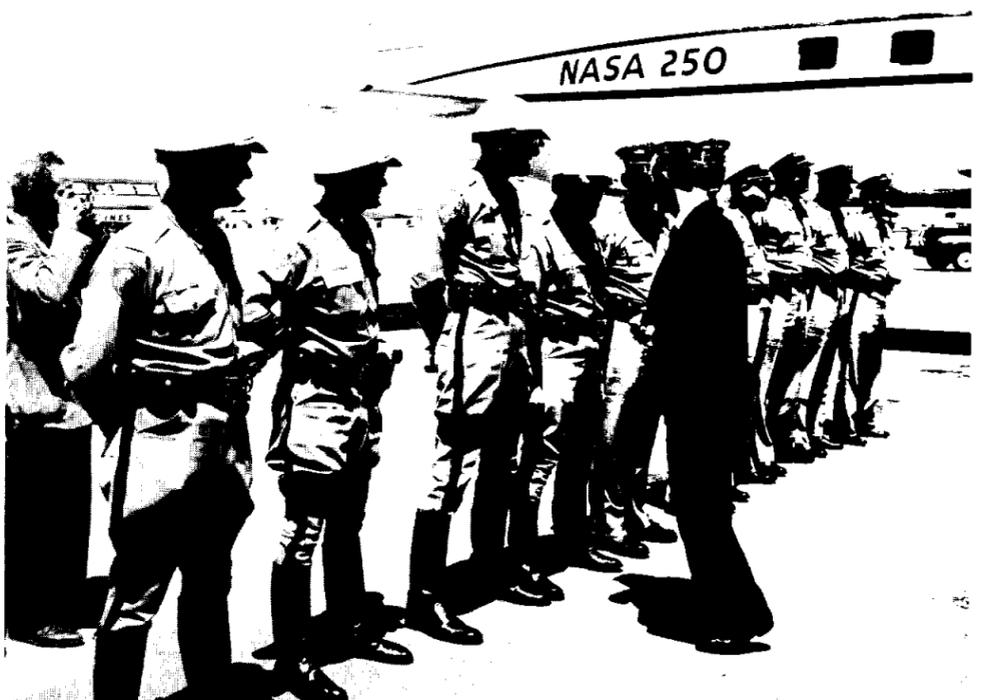
ONE VIEW OF the estimated crowd of 250,000-300,000 people who jammed downtown Denver to see Carpenter take part in the Memorial Day parade.



DENVER POLICE OFFICERS had their hands full as they tried to hold back the crowds which wanted to touch Carpenter or to get his autograph.



FLAG-WAVING AND sign-holding children by the thousands who were among the largest crowd ever to view a parade in the history of Colorado.



BEFORE LEAVING DENVER for Langley AFB, Carpenter took time out to thank the police for the fine cooperation and protection he had from them during the ride through Denver and in the parade.

## Atlas Radio Command Guidance Systems Controls Is Described

The role of the radio-command guidance system in Mercury-Atlas manned orbital launches is twofold. First, the guidance system controls the flight of the Atlas vehicle by commands from the ground. And second, the guidance system provides instantaneous data on the missile's flight path angle and velocity to the Space Computing Center, NASA, Goddard Space Flight Center, Greenbelt, Md. This data is processed with other Mercury Flight data to determine the orbit. The information is used by NASA in making the decision to "go" or "no go" with orbital flight.

This ground command guidance, supplied by General Electric's Defense Systems Department, guides the Atlas by radio commands, and when the precise velocity and flight path angle are achieved to insert the spacecraft into orbit, it transmits a signal to cut off

the missile's engines.

Major elements of the guidance system aboard the Atlas are a track beacon (transponder) which sends signals to ground to determine positions and receive commands; a rate beacon (transponder) which sends velocity signals to ground; a decoder which recognizes and identifies signals as legitimate commands for beacons, and converts commands for autopilot; and an antenna which amplifies signals and provides a means for sending and receiving signals.

There are seven major elements on the ground: a one track radar which locks on signal from track beacon and determines position data; three rate antennas which receive velocity data from the rate beacon; a track console which is the heart of the track (position) measuring subsystem; a rate console which is the heart of the rate (velocity) measuring subsystem.

Also a flight data subsystem which consists of recorders, cabinets and plotter and takes real time measurements of the trajectory; a G. E. test conductor's console which displays confidence lights and data indications concerning the condition and performance of the guidance system, and provides communications during countdown and flight; and cabinets, trays and racks with electronic equipment associated with track and rate measurement subsystems.

## Sperry Utah Co. Gets Apollo Study Contract

John J. Leete, Division Manager of the Sperry Utah Co., announced today that the company has been awarded a study contract on the Apollo Spacecraft Project.

The contract, from North American Aviations Space and Information Systems Division, Downey, California is for approximately \$50,000 and calls for engineering assistance on a study on the in-flight test systems for the Project Apollo Spacecraft.

Sperry Utah Engineers working on the Apollo Spacecraft Project will perform preliminary design studies to support the development of concepts for the in-flight test system aboard the spacecraft.



**D. BRAINARD HOLMES, (left), director of NASA's Office of Manned Space Flight, arrived in Houston last week as principle speaker at the Museum of Natural Science Ball at the Sheraton Lincoln Hotel. With him are Congressman Albert Thomas, a resident of Harris County and chairman of the House Appropriations Committee, (center), and MSC Director Robert Gilruth. Holmes spoke on "Organizing for the Conquest of Space."**

## Graduate Study Candidates Should Turn In Course Needs

The second meeting of the Manned Spacecraft Center Graduate Study Steering Committee was held May 18, when the committee was briefed by Dr. Frank Tiller, Dean of Engineering, and Dr. Elliot Organick, head of the Computing and Data

Processing Center, on the current capabilities of the Univer-

sity of Houston in various fields of graduate study.

The committee discussed enrollment for the summer semester at the University of Houston, and determined that the official policy of MSC is to encourage and allow employees to participate in graduate study during duty hours. The only exception to this policy is when individuals prefer to attend night courses for personal reasons.

Each member of the committee was asked to make an effort to determine which graduate courses should be taught during the Fall Semester. Each committee member was asked to be prepared to reflect his organization's needs at the next Graduate Committee meeting to be held in late June.

Any employee who is interested in graduate study should make known his specific course needs to his organization's representative on the Graduate Committee. Committee members are:

Office of Director, Paul Purser; Spacecraft Research Division, Jack Eggleston; Systems Evaluation and Development Division, Joseph Kotanchik; Life Systems Division, Richard Johnston; Space Physics Division, Warren Gillespie; Flight Operations Division, John Mayer; Data Computation Division, Eugene Brock; Gemini Project Office, Andre Meyer; Apollo Project Office, Tom Markley; Office of Assistant Director for Adminis-

## Boulder P. O. Does Its Bit For Community

Even the Post Office Department in Boulder, Astronaut Scott Carpenter's home town, went to great lengths to let the world know its pride in the hometown boy made good.

In addition to the parades, luncheons and other salutes going on in Boulder May 29, Boulder Post Office employees were busily hand stamping 40,000 outgoing letters with:

"From the Hometown of Astronaut Scott Carpenter on Scott Carpenter Day, Boulder, Colo., May 29, 1962."

It was the second time the post office had done its bit for Boulder.

On May 24, when Carpenter was whizzing around the earth in his spacecraft, employees were stamping letters with:

"From the Hometown of Astronaut Scott Carpenter on the Day of His Orbital Flight, Boulder, Colo., May 24, 1962."

Both stamps were in bright red half-inch high letters.

"I guess we wanted everyone to know how proud we were, and no mistake," Postmaster James D. White said.

In addition to the other honors bestowed on Carpenter following his MA-7 flight, he was named to the Denver Post Gallery of Fame.

Carpenter was one of five named "in appreciation for some recent public or private act of service or benefaction." He was cited "for his historic three-orbit flight around the earth in the Aurora 7 spacecraft."

tration, Philip Whitbeck; Personnel Office, Jack Lister; and Procurement Office, Pinkney McGathy.

## Changing Schools Didn't Harm This Youngster's Work

Inspiration for parents who worry about the effect a change of schools in mid-year will have on the kids' grades:

Young Gregory Miller, son of S. Park Miller of Spacecraft Research Division, Integration Branch, will be 14 years old this month. Last month he topped some 175 other students in a four-day quiz in geography which took in the five classes at Hartman Junior High School taught by Mrs. Krause.

Said the teacher: "I just couldn't get the best of him. He knew everything I asked."

The accomplishment by itself would be quite a feather in Gregory's cap, but there is more. Since the beginning of the school year in September, the boy has been in four different school systems; two in California, a third in Buckroe Beach, Hampton, Va. after his father joined MSC at Langley, and the fourth here when the Millers transferred to Houston.

In addition, his arm has been in two different casts for a good part of the school year after he broke it in an accident. In spite of everything, his school average has stayed in the A and B class, except for one C—in gym, because of the broken arm.



**FORMER VIRGINIA GOVERNOR Colgate Darden (left) recently presented the first place award in the special events category of the Virginia Associated Press Broadcasters Awards to newsman Dick Kidney (right) of WGH radio, Hampton, Va. The Ohio Broadcasters Association, judges in the event, chose the tape of Kidney's description from Cape Canaveral of the flight of Alan Shepard, on May 5, 1961, for the prize. The award was presented at a banquet held in Norfolk's Golden Triangle Hotel last month.**

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Staff Writer . . . . . Anne T. Corey  
Staff Photographer . . . . . Bill Taub

# Editorial

(Reprinted from the Denver Post)

He was home for only a couple of days because, as he said, "there are capsules to be checked and men waiting to fly them," but Colorado's cheers will be ringing in the memory of Scott Carpenter for a long time.

Boulder gave him a hometown welcome that lasted most of Tuesday and his university him an earned degree in engineering that he confessed meant more to him than its Recognition Medal.

Here and there during the two days he could reach out and shake hands with a boyhood friend, and unexpected encounters along the way added their warmth to the more official greeting. From his comments the affection he holds for his native state was perfectly plain, and Colorado's feelings about him were equally self evident.

But Scott Carpenter really has another "home." Presently it is at Langley, Va., close by his work. Soon it will be Houston, Texas, where the new NASA space center is being built.

For this, it goes without saying, is no ordinary man. This is a U.S. astronaut, the second American to orbit the earth, and who is to say where he might be hanging his hat a year from now, or two years?

But from the glimpses we've had of Rene Carpenter and the four children, we'd guess none of the solid domestic qualities of the American home have been missing from the Carpenters' life together. Their mutual pride and affection is as unassuming as their individual charm.

This quality of the astronauts—the quality of naturalness and quiet strength in the face of sudden fame and celebration—is one that is shared by their families, and it somehow continues to astonish many of us even though it represents perhaps a common American ideal. It says something like "Home is where the heart is."

## On The Lighter Side COUNTDOWN by Dave Cox



"About those luminous particles you saw, Commander, could they have been feathers?"—San Francisco Chronicle

# EDITORIAL EXCERPTS

## THE MEN WHO KNOW DANGER

(Denver Post, May 27, 1962)

During the last United States presidential elections perhaps the most profound if least defined issue was that of American prestige and the American image abroad. These had unquestionably diminished even if the reality of U.S. power and the truth of U.S. intentions remained untarnished in their essence.

American prestige and the American image abroad have now, however, been to a very substantial degree repaired and the individuals most responsible for this enormously significant event are John Glenn and Scott Carpenter. This, is, of course, not to be interpreted as meaning only the heroic Glenn and Carpenter but all the thousands of men associated with the vast project that has made their space explorations possible, starting with President Kennedy.

The president had to make the difficult decision of permitting these fantastic enterprises to occur in the pitiless glow of full publicity. The risk of disaster before the world's collective eye was quite as immense as the gamble on success. But the game has paid off and paid off hugely.

Although Americans have been second in the celestial race, as far as priority is concerned, they have established a special primacy by the way they have accomplished their endeavor. For that way is in truth an advertisement of the value of an open society and its vigor, a profoundly important advertisement.

Colonel Glenn's constricted capsule is now journeying much more slowly about the earth on display and the television film of his adventure is being shown on many continents. Last Thursday at lunchtime in Paris it was again shown here after a modest, proud and moving introduction by Admiral "Cat" Brown, retired former commander of the Sixth Fleet and NATO's southern forces. At that very moment Commander Carpenter was whirling along his own orbital journey and the audience that saw Glenn's straining features felt they were also looking at those of Carpenter.

Why have these two events had so effective and distinct an impact on the international position of the United States? I find this difficult to analyze in original words. It is easier to fall back on the most beautiful of all expressions of the true philosophical meaning behind the Glenn and Carpenter voyages. This was couched some 25 centuries ago by the great Athenian democratic leader, Pericles, who even then spoke of the "world of

# MSC PERSONALITY

## Flt. Crew Ops Chief W. J. North Took Training With Astronauts

Warren James North, chief of MSC's Flight Crew Operations Division, might almost be described as a "non-operational astronaut."

Intimately involved in the Project Mercury astronauts, he has a complete set of astronaut equipment and has gone through most of the training with the famous seven, including sessions in the centrifuge, the heat chamber, zero-G flying, and other phases.

Flight Crew Operations has the responsibility for astronaut training and integration of the crew into the design and operation of the spacecraft and launch vehicle.

A veteran of NACA-NASA service, North began his career in 1947 when he joined the Lewis Flight Propulsion Laboratory in Cleveland, Ohio.

A native of Winchester, Ill., he had received a BS Degree in aeronautical engineering from Purdue University the same year. His college career had been interrupted from 1943 to '45, which he spent as a pilot in the Air Corps.

North spent his first five years with NACA in a dual capacity as engineer and engineering test pilot at Lewis, then transferred to the Aerodynamics Noise Branch in 1953 to conduct research on turbojet noise reduction.

In 1954, he received his MS in aeronautical engineering from Case Institute of Technology. The following year he was awarded the IAS Flight Test Engineering Fellowship to Princeton University, where he furthered his academic career in aeronautical engineering and particularly in flight testing.

After receiving an MA from Princeton, he returned to the Lewis Laboratory and was appointed assistant chief of the Aerodynamics Noise Branch.

Two years later he was promoted to head of the stability group of the Missile Design

changes and chances" into which "we are born."

Americans might hopefully say again today in appreciation of the astronauts, their technical and political guides and assistants, and the very system that has made this triumph possible, what Pericles once told an Athenian assemblage:

"Ours is a constitution which does not imitate those of our neighbors, but is rather a pattern to others. Because power rests with the majority and not with a few, it is called a democracy; in private disputes all are equal before the law, and in public life men are honored for conspicuous achievement in any act, and not for sectional reasons; nor is any poor man, who has it in him to do good service to the city, prevented by his obscurity. Ours is a free state, both in politics and in daily life.

selection and training of the

Panel, and served in this position until his transfer to Washington, D. C. in 1959.

North was appointed head of manned satellites in the office of Space Flight Programs October 1, 1958, and in this position has been assisting in the coordination of Project Mercury.



Warren J. North

In addition to his work in selection and training of astronauts, he has been deeply involved in planning for Project Gemini. He supervised the preparation of plans for Gemini and has made many significant contributions to the design and development of the Gemini spacecraft.

Among his published reports are numerous works on ramjet design and operation, aircraft dynamic stability, and turbojet noise analyses.

The 40-year old North is married to the former Leah Pendleton, formerly a school teacher. Mrs. North and the couple's three children, James W., 9, Mary Kay, 7, and Susan Lee, 3, are now living in Bethesda, Md. The family will be moving to Texas in the near future.

"We are superior to our enemies, too, in our preparations for war. Our city is open to the world. We are not always expelling foreigners for fear of their learning or seeing something of military importance; for we trust not so much in secret armaments as in our native courage. In education, too, they try to inculcate manliness from youth up by a laborious training; we live freely, and yet we face the same dangers quite as readily as they.

"We do not consider that debate makes action ineffective, but rather that the practice of rushing into action without being informed beforehand does so.

"Those men surely should be deemed bravest, who know most clearly what danger is and what pleasure is, and are not made thereby to flinch."

What more is there to add?

## Need Legal Help? Houston Has Lawyer Referral Service

Moving into another state can bring the private affairs of individuals into legal situations that are new and strange to them, as quite a few incoming MSC personnel are finding out.

The relocation center has tried to do everything possible to make information available on every-day matters, such as Texas traffic laws, but employees still find themselves involved in many other legal questions, some minor and some serious. The problems include everything from buying a house to giving away a cat or bumping a fender.

One way a stranger in Houston may locate a needed lawyer is pointed out by the MSC Legal Office. The Legal Office does not itself have the authority or staff to furnish legal research and opinions on the various personal problems of individuals.

However, a non-profit Lawyer Referral Service has been set up within the past year under the auspices of the Houston Bar Association. A person who thinks he may have a legal problem but has no lawyer to diagnose or handle it

may see the director of the service, Horace O. Young, explain his situation briefly, and be referred to one of the Houston attorneys participating in the service.

There is a nominal referral charge of \$1.00 to help offset expenses of the service.

The individual may then call on the lawyer to whom he is referred, and get consultation at a fee of \$5.00 for up to 30 minutes of the attorney's time. If the problem requires more extensive attention and the individual wishes to employ the attorney, any additional fee is agreed upon between the, without further action by the Referral Service.

Although this is not a free legal clinic for indigents, the plan does intend that the attorney's fee charged will be on a reasonable basis.

The Legal Office suggests anyone in a legal plight may be wise to act promptly.

The director of the Lawyer Referral Service may be reached by telephoning CA 2-6655. The address is Room 521, Bank of the Southwest Building.

## MSC Couple Wins Motorboat While Looking For A House

An MSC couple who will move to Houston this month will find a brand new outboard motorboat worth some \$1300 waiting for them.

They are Mr. and Mrs. Thomas J. Grace. Grace is now stationed at Langley in Virginia. Grace has been with the MSC data and measurement office there since last Jan. 1.

The couple was on a house-hunting trip to Houston last month when they toured the Bay Area Revue of Homes display at Fairmont Park. With thousands of other visitors they

registered for the 14-foot fiberglass Capri that was being given away by the Revue—and won.

By the time the drawing was held and the Graces declared the winners, they had already returned to Langley.

Mrs. Grace Winn, of the MSC relocation office, accepted the title to the boat for the winning couple in ceremonies May 27.

Mr. Grace was formerly with Western Electric in Greensboro, N. C. Mr. and Mrs. Grace are natives of Tuscaloosa, Ala.



**TOM GALLAGHER (right) simulates an astronaut in the raft on which M. Scott Carpenter floated for three hours following his three orbit mission May 24, as Gallagher and Matthew Radnofsky (left) look over Carpenter's survival equipment. In Gallagher's hand is the SARAH beacon picked up by the first plane to locate Carpenter. At center left is the "rams horn" life vest designed and developed by Life Systems, and at lower left the drinking water bag with its corkscrew tube.**

## How To Survive In Relative Comfort; Use Life Systems' Own Special Raft

A project which began in November of 1959 came into its own so far as worldwide attention was concerned last month when Astronaut M. Scott Carpenter spent some three hours riding the swells of the Atlantic on a one-man life raft.

The raft was not the standard PK-2 raft which has been in use for some time by the military.

It was lighter in weight, more stable in use, smaller when packed and larger when inflated. And it was especially designed and fabricated for astronaut use after months of research by the Life Systems Division personnel of the Manned Spacecraft Center.

Having already proved its worth in numerous tests at sea, (and attracted the interest of both the Air Force and the Navy in the process), the raft proved effective enough in actual use to keep the two para-medics who dropped to Carpenter's aid from even opening the large 20-man life-rafts they brought with them.

It was stable and comfortable enough so that Carpenter told the press after his return that he had an pleasurable time of it while waiting for the helicopter from the aircraft Intrepid which eventually picked him up.

Development of the raft began in the late 1959, when it was decided that the first life-raft for test in Project Mercury should be similar in design and material to the standard PK-2 raft with several exceptions. Among them was the use of three ballast chambers, one under the floor at the bow and two others at right and left of

the center of the raft, holding a total of three gallons of water, for stability in rough seas.

The first model was tested in January of 1960 in the Langley NCO pool by Astronaut L. Gordon Cooper attired in full pressure suit. It proved difficult to capsize and easy to board. The following March, the same raft was tested in the open sea near Pensacola, Fla., and again proved superior to the conventional PK-2.

A search of ways to reduce weight turned up stainless steel carbon dioxide cylinders, used for inflating the raft, which proved as satisfactory as the conventional steel cylinder and saved eight ounces in weight.

In October of 1961, a second series of sea tests were successful.

Later that same month, the first model, designated X-1, of radical departure from the conventional PK-2 construction and material was tested, and found satisfactory.

The unit is significantly lighter, packages thinner than than the PK-2, and gives the occupant more room when inflated. It contains only one seam, as opposed to 11 seams in the previous rafts, and is fabricated "on the flat" making it simpler, less expensive to put together and more compact when packaged.

Because the floor of the raft is held above the water in the relaxed state, a sort of suction effect is created as the peripheral tube is partially "sealed" to the water. This, with the stabilizing buckets, increases the stability of the raft in rough seas.

Boarding aid handles were

installed on the floor of the raft to help the astronaut climb aboard, and those on the outer tube were turned vertically for the same reason.

Now a standard flight item for Mercury mission, the raft is packed in a kit along with a bag containing five pounds of fresh drinking water, signal devices, survival rations and other standard survival items. The whole package, including the drinking water, weighs only 24 pounds. The drinking water is used both in flight and on the raft, if the latter is necessary.

Instrumental in the development and design of the raft was Matthew I. Radnofsky, AST, of the Life Systems Division. Equipment specialists Glenn A. Shewmake and Tom Gallagher, attached to Life Systems, themselves did the fabrication of the raft and other inflatable survival items such as the life vest.

The raft, constructed of neoprene coated nylon has a splash cover of mylar nylon coated with aluminum which is kept tightly furled and out of the way around the peripheral tube until it is needed.

"I was present at the debriefing on Grand Turk," commented James W. McBarron of Life Systems, an engineer who has been responsible for a large part of the craft's development. "Carpenter told us he had 'a very pleasant' time in the water," and said he was quite comfortable."

His comfort can be attributed to many months of painstaking research and development by the engineers and technicians of the Life Systems Division.



**PART OF THE NEW \$1300 outboard motorboat won by an MSC couple last month can be seen in the background as Robroy C. Carroll, president of the Bay Area Development Council, presents the title to Mrs. Grace Winn of the relocation office. Mrs. Winn is accepting the prize for Mr. and Mrs. Thomas J. Grace, who will move to Houston this month.**



## SECOND FRONT PAGE

## Second Major Clear Lake Building Contract Awarded

The Fort Worth District, U. S. Army Corps of Engineers, will issue invitations for bids to prequalified bidders about July 7 for construction of support facilities for the Manned Spacecraft Center near Houston. The announcement was made by Col. R. P. West, District Engineer, Fort Worth District.

Col. West said he expected to open bids the first part of August and that construction would commence soon thereafter.

Work under this contract, the second major construction work to be performed for the Manned Spacecraft Center, will include support facilities consisting of three buildings and totaling approximately 70,000 square feet, including an office building, a shop building and warehouse, and a garage. Necessary paving and utilities work will be performed in conjunction with these facilities.

A central heating and cooling plant with 5,000 tons of air conditioning, a fire station, a sewage disposal plant for a population of about 3,000 persons, and tunnel piping are also included in the work.

The approximate value of

the proposed construction is estimated at \$4,000,000. The work, which is being performed for the National Aeronautics and Space Administration under the supervision of the Corps of Engineers, is scheduled to be completed in twelve months time.

The initial construction contract for the project was awarded during the latter part of March in the amount of \$3,673,000 to the joint venture of Morrison-Knudson Construction Company, Inc., of Boise, Idaho, and Paul Hardeman, Inc., Stanton, California, for site development and basic utility installations at the Center.

The remaining work, primarily building construction, at an estimated cost of over \$10,000,000, will be scheduled at a later date.

## Bendix Awarded Tracking Station Operation Contract

The Bendix Corporation's radio division at Towson, Md., has been selected for the award of an incentive contract to operate five of NASA's world-wide Project Mercury tracking and communications stations.

In addition, the contract, costing approximately \$10 million over a two-year period, calls for certain engineering and operations services for all 16 Mercury network stations. Bendix has been performing such services under an existing contract since July 1, 1961. The new contract will be effective Jan. 1, 1963.

A total of seven other companies submitted proposals.

NASA's Goddard Space Flight Center in Greenbelt, Md., which will monitor Bendix performance, said the company will be able to earn incentive payments above its fixed fee by demonstrated superior performance.

Incentive contracts have been used before, particularly in research and development "hardware" contracts. This contract, however, is believed to be the first awarded by any agency to provide a monetary incentive for outstanding per-

formance in service-type work.

In addition to the incentive feature, contract provisions include ceilings on indirect costs, options for extension of the contract under the same terms as the initial contract, and the ability to retain key employees within the Mercury Program should another contractor be selected at a later date.

Under the award, Bendix will operate and maintain stations at Bermuda; Grand Canary Island; Kano, Nigeria; Zanzibar; and Guaymas, Mexico. The company will also maintain and operate a training facility at NASA's Wallops Station, Wallops Island, Va., and operate aircraft which will service and calibrate the electronics communications equipment at all stations. In addition, the contract will provide for a depot for logistics support at Owings Mills, Md.



MEMBERS OF A SPECIAL subcommittee of the House Labor and Education Committee visited MSC May 26, to gather information for proposed hearings on the adequacy of the Davis-Bacon Act, dealing with pay rates and other relationships with government contractors. The group had previously visited Vandenberg AFB, Calif., and Davis-Monthan AFB, Ariz. Left to right are Congressmen Roman C. Pucinski (D-Ill.), James Roosevelt (D-Calif.), chairman of the group, David T. Martin (R-Neb.), and Neal Smith (D-Iowa).

## WELCOME ABOARD

Some 56 new employees joined Manned Spacecraft Center during the last half of May, all but 11 of them at Houston. Those listed for Cape Canaveral Administration and for Preflight Operations will be stationed at Cape Canaveral. Of the remainder, five came

### Rocket Power, Inc. To Build Gemini Escape Catapult

Rocket Power, Inc. of Mesa, Ariz., has been awarded a contract to supply a rocket catapult for the escape system of MSC's two-man Gemini spacecraft, RPI president C. E. Bartley announced last week.

The system, for use by space pilots to escape from their craft in an emergency, differs radically from the 16-foot escape tower of the Mercury spacecraft.

Bartley described the new system as "similar to the rocket ejection catapults designed by Rocket Power for jet fighters." An ejection-type seat will be provided for each crew member. The seats will slide in track assemblies and will be attached to the rocket catapult ejection assembly.

Rocket Power will design, develop, qualify and produce the escape rocket catapult for Gemini. The spacecraft is being developed by McDonnell Aircraft Corporation for NASA.

Gemini will be used for extended manned orbital flights lasting a week or more and for demonstration of rendezvous and docking with a satellite while in orbit around the earth.

aboard at Langley prior to transferring to Houston and two will be stationed at Downey, Calif.

*Cape Canaveral Administration:* Edward N. Caldwell.

*Apollo Project Office:* Lyle Morris Jenkins, Lou S. Young, Elaine M. Hlavinka, Carol J. Schornack, Billie L. King, Jean A. Taber, Juaita M. Rex, Rita C. Pardue, and Ann S. MacLean.

*Program Analysis and Evaluation:* William J. Benefas.

*Preflight Operations:* William R. Durrett, Lawrence W. Bell and Alan C. Rosenbaum.

*Flight Operations:* Richard E. Charters and William G. Folkes.

*Flight Crew Operations:* George H. Parker.

*Systems Evaluation and Development:* Thelma B. Horn, Barbara H. Higgenbotham, Julia M. Little, James C. McCown, Jimmy D. Bradley (return to duty) and Reagan S. Redman (return to duty).

*Life Systems:* Herman S. Sharma and Donald M. Perry, Jr.

*Spacecraft Research:* Charles D. Brady.

*Data Computation and Reduction:* Barbara C. Biggs, Gene S. Shrum and Ralph E. Hill.

*Audit Office:* Esther T. Hurdle.

*Legal Office:* Mary F. Poe.

*Steno Services:* Maxine Henderson, Barbara G. Adams, Linda C. McKay, Sheila Fleming, Sandra M. Erwin and Sandra S. Spear.

*Technical Services:* Richard A. Sandridge.

*Procurement:* Charles E. Statz, Edna D. McAnelly, Nancy H. Gabriel, Peggy J. Cunningham, Adele P. Emery and Irene L. Garchie.

*Personnel:* Lana J. Matthews.

*Financial Management:* Robert G. Bryan, Henry M. Forstner, Opal J. Green and Marion Y. Bailey.

*Public Affairs:* Donald W. Biggs and Vernon E. Powell.

*Facilities:* Emerson G. Gray.

*Photo Services:* Mildred B. Rogers, Charles H. Nelms, Jr. and James C. Weaver.

### Ilikon Corporation To Test Metals For Apollo Project

Ilikon Corporation of Natick, Mass., will assist in the selection and testing of certain of the special metals to be used in the NASA Apollo project, which will carry three men to the moon and back.

According to Dr. Laszlo Bonis, Ilikon Technical Director, the Natick firm will assist in the selection and testing of alloys capable of withstanding the extreme temperatures, pressures and other unusual conditions of outer space.

In addition, Ilikon will be partially responsible for the simulated space testing of components fabricated out of these special alloys, such as gears, bearings, mirrors, other optical parts, rotary seals and electrical feedthroughs.

Dr. Bonis explained that these rigorous tests are needed because of the severe environmental conditions that the components will be exposed to in space.

Ilikon was selected to perform this critical Apollo development and testing work because of its unique combination of capabilities both in advanced materials research and development and in simulated space environmental testing. All of the work will be carried out at Ilikon's Natick, Mass., facility, which includes a complete space simulation laboratory.